• CHAPTER 2 •

Slow Violence in Film

The Good Shot

Fukushima author Kido Tamiko wrote the following stanza of a poem called "Fairyland" after the nuclear reactor meltdowns on the northeastern seaboard of Honshu:

> The sea where I was born no longer exists.
> Waves shine, pungent with the smell of the ocean.
> Silver fish jump and flash in this calm and deep place.
> Fine sand touches my toes.
> The sea is still there, however.[1]

In a biotrope of the shining surface of an ocean, Kido treats the sea as both utterly the same and utterly different after radioactive fallout in Fukushima. On the one hand, it is the sea of the speaker's childhood: it sparkles, it has an odor, and the sand of its beach where the waves stop is still soft between the toes. At the same time, though, it is utterly changed, as intimated in the first line: "The sea where I was born no longer exists." This first-person narrator alludes to the active ocean currents that flowed past as TEPCO reactors released trillions of becquerels of radiation into the Pacific and continue to do so as contaminated water is released from spent fuel pools on a daily basis. The poem references the problem of the invisibility of radiation: the sparkling waves and jumping fish give no evidence of contamination, but the radiation is there. The fishing industry of the area is decimated.

The paradigmatic toxins of modernity are those that escape visual perception. Veteran cameraman Ōtsu Kōshirō worked with Tsuchimoto Noriaki on many of his films on mercury poisoning. On the first day of filming *Minamata: Victims and Their World* (1971), Ōtsu could have taken a picture postcard shot of the Shiranui Sea. The sea sparkled in the sun and

the fish jumped.[2] The familiar sound of fishing boats putt-putting across the bay might as well have been a scene from an Ozu film. But, instead, he and Tsuchimoto eschewed the picturesque or what Martin Lefebvre called an "intentional cinematic landscape" in which landscape arises as object of contemplation.[3] As Lefebvre argues, landscape in cinema has been treated either as ambient background or as a site through which the cinematic apparatus gets featured by way of the gorgeous landscape on the screen. Either way, the landscape offers itself up for contemplation and, according to Lefebvre, "has come to signify a view of nature emancipated from the presence of human figures and offering itself for contemplation."[4] Film scholar Adrian Ivakhiv, in his discussion of cinematic landscapes, is more literal, asserting that there is a background or landscape that preexists new moving images of the earth. Even within "geomorphing," elements are mobilized "against a background of landscapes that remain relatively stable and unchanging" in the cinematic endeavor, according to Ivakhiv.[5] In either context, landscape is the subject of what Gilberto Perez called "the outlook of a confident humanism" where a "commanding view of the scene" by the individual human gaze enables a sense of it being "relatively stable."[6] It makes nature ambient while humans and the objects they take up are the source action and life, a landscape that Lefebvre has called not only an "intentional landscape" but a "spectator's landscape." The tension that film theory is particularly poised to resolve from an ecocritical perspective is articulated by Lefebvre: "Is landscape the world we are living *in,* or a scene we are looking *at,* from afar?"[7] How can we theorize landscape as part of an ontology for film that better accounts for the agency of things as they may exist beyond the human gaze?

The idea of landscape as either ambient or a stable space in which we dwell is precisely what a critique of industrial modernity refuses. An ecocritical approach to landscape for moving images will ask how film theory can account for the mutual constitution of self and the world within the film frame. How can film theory interpret interconnection in the world, which Timothy Morton calls "the mesh" and new materialists have called "distributed agency," without treating landscape as ahistorical ambient space. We need a concept of the mise-en-scène that is more attentive to the vibrant materiality that has been rendered moribund through film theory's historically humanistic approach to landscape in particular and mise-en-scène more generally.

Tsuchimoto, who dedicated most of his life to documenting fisher

folk living in and around the Shiranui Sea, did not interpret landscape as aesthetic object or ambient background.[8] The good shot was not the one committed to landscape; it was the one committed to ecological systems. Even if the gorgeous Shiranui Sea could easily play the role of the dystopic sublime just like long shots of empty farms and overgrown gardens in documentarian Fujiwara Toshi's filmic record of lands contaminated with radiation in *No Man's Zone* (2012), that kind of landscape shot is absent in Tsuchimoto's Minamata films. Rather, the landscape is a place to fish, to bob on the waves, to wonder at the crabs crawling under the stones, or to discuss symptomology of mercury poisoning from the deck of a boat. Or it might be the object of the mercury disease victim's lively gaze, a penetrating gaze that made it impossible to treat the sea as ambient scape.

Filming Slow Violence

Six years before returning to Minamata to film *Minamata: Victims and Their World,* Tsuchimoto had endured scorn from locals for his filming of a 1965 television documentary on mercury disease victims. He was accused by one mother of treating her child as a performer in a freak show (*misemono*) and other criticisms followed. Award-winning poet and Minamata denizen Sakamoto Naomitsu remembers this incident and recorded it in his poem "Requiem for a Documentary Filmmaker":

> That life
> at the heart of Minamata
> unapologetically lays words flat
> and levels the proud claim "I am Chisso"
> and refuses any easy expression.
> He was
> sent back.[9]

The "he" of this poem is Tsuchimoto, who had yet to realize that there were no easy claims to be made about the victims of the disease. He returned to Tokyo until he read Ishimure Michiko's masterpiece of environmental literature, *Paradise in the Sea of Sorrow.* Deeply moved by the work, he determined to record the fisherfolk's ongoing struggle for justice and ended up spending the next thirty years of his life filming the Shiranui Sea and its people, experimenting with how to make visible the disastrous impacts of

industrial modernity. As the failure of Tsuchimoto's first television documentary illustrates, the mode of treating the devastating environmental pollution in Minamata as part of a news cycle was not at all ideal for representing the various impacts of environmental pollution by industry.

Postcolonial ecocritic Rob Nixon makes this point in his *Slow Violence: Environmentalism for the Poor.* "Slow violence" is a term he uses to describe the violence done to humans, animals, and the environment over time, a violence that is often invisible because it is difficult to represent pollution events like radioactivity, eutrophication, mercury poisoning, and so on: "Slowly unfolding environmental catastrophes present formidable representational obstacles that can hinder our efforts to mobilize and act decisively. . . . Violence is customarily conceived as an event or action that is immediate in time, explosive and spectacular in space, and as erupting into instant sensational visibility. We need, I believe, to engage a different kind of violence, a violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales."[10] Nixon offers the useful concept of "slow violence" to describe the long-term effects of polluting industries, toxic technologies of war, and environmental problems associated with global warming. He asks how we might "convert into image and narrative the disasters that are slow-moving and long in the making, disasters that are anonymous and that star nobody, disasters that are attritional and of indifferent interest to the sensation-driven technologies of our image-world?"[11] In his view, semiotic conventions for representing violence in media contribute to a lack of attention to slow violence: "In an age that venerates instant spectacle, slow violence is deficient in the recognizable special effects that fill movie theaters and boost ratings on TV. Chemical and radiological violence, for example, is driven inward, somatized into cellular dramas of mutation that—particularly in the bodies of the poor—remain largely *unobserved,* undiagnosed, and untreated. From a narrative perspective, such invisible, mutagenic theater is slow paced and open ended, eluding the tidy closure, the containment, imposed by the visual orthodoxies of victory and defeat."[12]

Slow violence poses representational obstacles because it unfolds over a length of time utterly out of pace with our spectacle-driven media. More interested in producing "disaster porn," media news cycles are not interested in slow violence and the habits of viewers eschew all but the spectacular in their daily rush through digital media. Filmmaker Fujiwara

Toshi's voice-over to his long shots of post-tsunami debris left in the "no-go" zone of radiated land makes precisely this point. Disaster images "become stimulants, often consumed as drugs. Today, perhaps, we have become simply addicted to all images of destruction."[13] Nevertheless, his films feature countless images of eerie expansive shots absent of humans portraying the rubble of the earthquake and long shots of overgrown farms and schools in radiated territories in Fukushima that feel prurient and voyeuristic.

Nixon suggests that moving images essentially cannot capture slow violence and that the only "good" use to which media images of environmental violence might be put is in using "the emotional jolt" of shocking images to achieve environmental justice.[14] Instead, Nixon privileges various forms of writing, including fiction, memoir, and essay, as most capable of representing slow violence because they are not beholden to visual media's thirst for spectacle: "Writing can challenge perceptual habits that downplay the damage slow violence inflicts and bring into imaginative focus apprehensions that elude sensory corroboration. The narrative imaginings of writer-activists may thus offer us a different kind of witnessing: of sights unseen."[15] The writing of atomic bomb victim Hayashi Kyōko is a good example. Her short stories constitute a textual rejection of the bomb's spectacularity in media as most evidenced in the widely circulating image of the mushroom cloud since 1945. Her prose is deeply conversational. Even descriptive passages about radiation are embedded in multiple frames of dialogue, letter, and first-person narrative. In her early work, Hayashi focused on the effects of radiation on the bodies of women, but decades later, she expanded her range of victims of atomic bombs to include all kinds of bodies, including those who endured nuclear tests in the United States. In a deeply moving epistolary collage of dialogue and storytelling in "From Trinity to Trinity" (2000), the iconic victim of nuclear war is the nameless snake that slithers in the grasses of New Mexico: "From the bottom of the earth, from the distant mountain range exposing its red surface, and from the brown wilderness, soundless waves pressed toward me. I squeezed myself. How hot it must have been. Until I stood on Trinity Site, I had thought that the first victims of nuclear damage on earth were us humans. I was wrong. There were elderly victims here. They were here, without being able to weep or cry out."[16] Hayashi came to write short stories that portrayed the slow violence of radiation in bodies of shy snakes and desert plants as counterpoint to the state-sanctioned

ressentiment that gets folded into dramatic Japanese nationalist discourse as the neoliberal government attempts to reconstitute a standing military.

Still, as literary critic Njabulo Ndeble points out, the written word is not immune to spectacularity. Literary forms can also produce a predictable drama of "ruthless oppressors and pitiful victims that calcifies the imaginative range of explorable experience," reproducing the seductive hegemony of spectacle.[17] Writing that calcifies the binary of oppressor and victim appears in predictable places, like apocalyptic fiction. For example, Frederick Buell finds 1970s American literature (contemporaneous to Tsuchimoto's films) as appropriately spectacular in its portrayal of environmental pollution. His example is Philip Wylie's 1972 novel *The End of a Dream,* in which the real-life event of the 1969 burning of the Cuyahoga River in Cleveland, Ohio, is transformed into an "explosion so cataclysmic it was attributed to an atomic bomb . . . registering a force at ground zero of 21 kilotons."[18] The elevated language of author Thomas Disch, who prefaced his collection of short stories with the following, is written in the vein of immediate crisis that Buell associates with Rachel Carson: "In effect the bombs are already dropping—as more carbon monoxide pollutes the air of Roseville, as mercury poisons our waters, our fish, and ourselves, and as one by one our technology extinguishes the forms of life upon which our own life on this planet depends. These are not catastrophes of the imagination—these are what's happening."[19] Disch resorts to violent visual metaphors of bombs in order to garner interest in the problems of carbon monoxide and other kinds of invisible toxins. So, while it can interrupt the sense of virtual immediacy that visual media produce in instantly showing violence as spectacle, literary narrative can offer the very same type of spectacle.

Conversely, visual media can represent slow violence without resort to spectacle. Films like Todd Haynes's *Safe* (1995), Kamanaka Hitomi's *Hibakusha: At the End of the World* (2003), and Jeff Orlowski's *Chasing Ice* (2012) portray ecological issues of multiple chemical sensitivity, radiation, and global warming without giving themselves over to Hollywood-style battle scenes and charged melodrama. *Chasing Ice* utilizes data visualization and time-lapse photography of melting glaciers to make global warming visible (though this film does have a masculinist, warrior-style narrative), while *Safe* effectively creates haunting mise-en-scène featuring long shots of the protagonist in her suburban dwelling with eerie gray and green hues to depict her slow physical and mental deterioration.[20]

Hibakusha: At the End of the World depicts the effects of radiation poisoning on humans through comparative examination of the impacts of depleted uranium leakage on communities in three countries: Iraqi victims of depleted uranium, particularly children; nuclear bomb victims in Japan; and American women living downwind of the Hanford Nuclear Site in Washington State. She could have included so many more groups like indigenous populations subjected to depleted uranium in the American Southwest, but Kamanaka's merging of three distinct sites of radiation nevertheless trumps the geopolitics of "America versus Japan" that often frame nuclear issues. As scholar and antinuclear activist Norma Field put it, Kamanaka's films do not reduce the problem of nuclear to perpetrators and victims: "Kamanaka's films are consistently sensitive to the economic needs behind communities' acceptance of nuclear reactors: there are no simple enemies. At the same time, they urge us—urban beneficiaries of the conveniences dependent upon electricity generated in modest rural communities—to become aware of our own complicity in the structure of risk."[21] All are examples of different film techniques that visualize slow violence and anthropogenic damage to the planet.

Filmmakers not satisfied to ignore the complexities of living in an industrial age engage various strategies for making slow violence visible in order to illustrate what Linda Nash has called the most basic and primary discoveries of the twentieth century: that people are inescapably part of a larger ecosystem and the extent to which human life is vulnerable to environment is heightened under industrial modernity.[22] Ecocritic Harold Fromm put it in strikingly visual terms: "The 'environment,' as we now apprehend it, runs right through us in endless waves, and if we were to watch ourselves via some ideal microscopic time lapse video, we would see water, air, food, microbes, toxins entering our bodies as we shed, excrete, and exhale our processed materials back out."[23] Film is particularly suited to capture the environment because it can capture the environment at different scales, from the microscopic to the macroscopic.

The rest of this chapter will examine the ways in which Tsuchimoto has depicted slow violence in cinema. His films' treatment of bodies and mise-en-scène will be discussed as formal, theoretical, and social modes for depicting industrial toxins. The broader point is to illustrate how the specter of slow violence was visualized in his moving images. The filmic elements discussed in this chapter include: Tsuchimoto's avoidance of landscape shots that make the land and sea ambient; his refusal of montage

and spectacle; his analytical rather than presentational approach to the body as revealed through an optics of ambulation; the lively ontology of his mise-en-scène; and the reconceptualization of the body in motion within the context of cinema history.

Optics of Ambulation

Cats were the beloved pets of Shiranui Sea denizens, as cats killed the rats who chewed holes in fishing nets. When fishing boats returned from the morning's catch, cats, along with dogs and even foxes, recognized the slow chug, chug, chug of the engines returning to port and sauntered down to the docks for fish scraps. But in the late 1950s, the cats began to die, and as the cats began to die, the rats grew in number and damaged the fishing nets. More cats were brought in to protect the nets, and they died too. As researchers tried to get a handle on why the cats were dying, they experimented on hundreds of domestic and feral cats and filmed their experiments. Donning white coats, researchers gathered at the shore to collect small clams, extracted the flesh from the shells, and placed the clam flesh in large bowlfuls in front of cats, who relished the meals but then exhibited profoundly disturbing behaviors within weeks of eating the shellfish. The toxin that polluted an entire sea and its denizens was eventually discovered through these countless experiments on cats.

Tsuchimoto uses original film footage from lab experiments on cats in his three medical documentaries (*Minamata Medical Film: A Trilogy,* 1974). Each is subtitled according to its focus: *Documents and Testimony*, *Pathology and Symptoms,* and *Clinical Practice and Epidemiology*. Scholar of Japanese media and activism Justin Jesty provides a clear analysis of the primary thrust of each of these sophisticated medical films, which use data visualization, dialogue with physicians in voice-overs, original medical film footage, and other strategies for depicting the long and arduous road to understanding the disease that afflicted particularly fish, cats, birds, and humans.[24] The first film combines the screening of original lab films of diseased cats with the filmmaker in dialogue with the physicians who filmed them. Some were of pets who had gotten the disease through their daily habit of scrounging for food and others were of subjects fed a rich shellfish diet by lab technicians in order to prove that the food source from the sea was toxic. With the eventual onset of the disease, which took hold of their bodies after a few weeks, the cats struggled to control their back legs.

They flung themselves into walls, ran willy-nilly at high gear into the ocean water, and appeared to walk on their front paws only. In one shot, the film uses entirely original film footage of a solemn looking cat lying on a red blanket hissing at a rat that had been placed between its paws. It strains to bite the rat's hairless pink tail, but its body has become a useless rag (Figures 1 and 2).

This and the original medical film of cat #400, which appear in the medical film trilogy and in Tsuchimoto's *Minatama: Victims and Their World,* are bleak shadows of the very first films of animal locomotion in early moving image technologies. Named for the "zoe" of the animal world, Eadweard James Muybridge's "zoopraxiscope" projected still images of animal locomotion from a spinning disc to create the illusion of motion. The visual magnificence of the zoopraxiscope and other early technologies was touted through images of lively animals. It was animals in cinematic motion that lead us from nature to technology, according to theorist Akira Mizuta Lippit: "Animals were particularly useful in the development of technical media because they seemed to figure a pace of communication that was both more rapid and more efficient than that of language."[25]

In early cinema, the running animal celebrated both the spectacle and the apparatus of cinema in a single, long, and unbroken motion. Muybridge's *Animals in Motion* and *The Human Figure in Motion* "display the fascination with which animals and animal movement captured the photographic imagination":

> What is remarkable in Muybridge's work, what immediately seizes the viewer's attention, is the relentless and obsessive manner in which the themes of animal and motion are brought into contact—as if the figure of the animal had always been destined to serve as a symbol of movement itself. The movement of Muybridge's animals, at first across the frames and then eventually the screens of a new industrial landscape . . . aided the advent of a new mode of representation—cinema.[26]

As analyzed by John Ott, in addition to offering a new example of the communicative possibilities of moving images in cinematic history, animal locomotion on the screen was handmaiden to industrial modernity. Ott claims that Leland Stanford and his colleagues, advocates of the animal

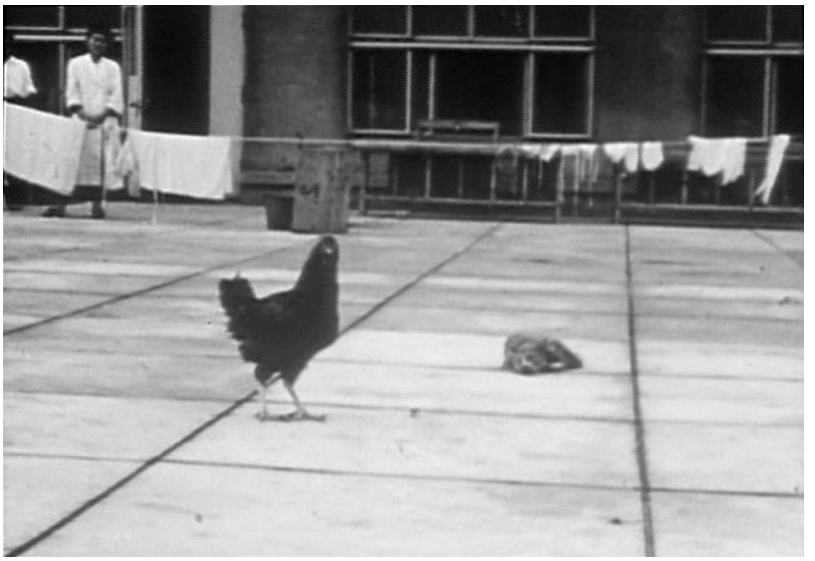

Figure 1. Mercury-poisoned cat and chicken (Tsuchimoto, Minamata Medical Film: Documents and Testimony, *1974).*

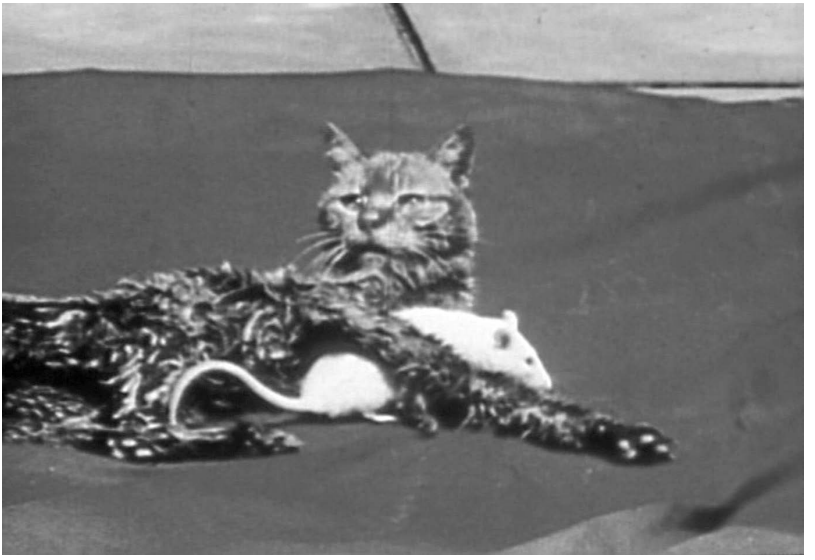

Figure 2. Mercury-poisoned cat and rat (Tsuchimoto, Minamata Medical Film: Documents and Testimony, *1974).*

images of Muybridge, "publicly staged and disseminated these photographs in order to consolidate, promote, and naturalise the developments of industrial capitalism," and he continues: "At every stage of the images' production, Stanford and his carefully chosen representatives framed, staged, and promoted these experiments as the product of a rational, positivist science. . . . The very set-up of the camera shed and complex recording instruments recall the forum of a research laboratory, a milieu that grew to maturity in the industrial sector in the 1870s and 1880s."[27] At the time, Muybridge's ability to capture movement in still frames and replay them for motion was featured in science and nature journals. He filmed birds and animals of all kinds in motion and these became the first examples of photography and moving images to give birth to what Ott calls an "industrial gaze." This industrial gaze observes the body as kinetic energy that could be understood through motion photography. Muybridge's horses proved the dynamism of locomotion that was being invented in the locomotive. The industrialized eye saw within both kinds of bodies—horse and locomotive, animal and machine—a kineticism that would be foundational to the new industrial order.

The Muybridge photos encouraged viewers to imagine the horse and, by extension, all of nature as another kind of machine. The horse is a cog in the burgeoning industrial economy for the way that the photographs show the horse in motion: "Thus these experiments did not just prove that horses acted like bundles of gears, levers, and engines; rather, for Stanford and his backers, they epitomised the necessity and inevitability of a new corporate industrial order buttressed by scientific authority, managerial supervision, and complex, capital-intense technologies."[28] The industrial gaze was produced in the mechanical treatment of the body in image. Cameras were counted and placed, and time was measured, all to reveal the mechanism of the body through stop-motion photography that would habituate the naked eye to new industrial optics. This, Ott argues, is the logic of the industrial gaze: the Muybridge photographs "standardised a sort of a physiological time, so to speak, by which the actions of animals and humans could be clocked and against which they could be measured."[29]

Early trends in cinema unanimously identified the camera as uniquely able to capture and reveal physical reality because photography could reproduce nature with fidelity and precision. The visual attention to the photographs, data imagery, and microscopic image could appear as an

affirmation of positivism—an intellectual attitude that Siegfried Kracauer coincidentally described as "in perfect keeping with the ongoing processes of industrialization."[30] Scholar of early cinema Alan Williams, in an analysis of scientific records of living motion as illustrated in Mayer, Muybridge, and August Lumière, argues that living motion pieces were done not for the sake of their subjects, but rather to illustrate "the work of the apparatus itself." But the body and the apparatus were linked. The body filmed for medical studies and scientific techniques of motion recording produced a model of the body as a dynamic system. As Lisa Cartwright explains, "The film body of the motion study thus is a symptomatic site, a region invested with fantasies about what constituted 'life' for scientists and the lay public in the early twentieth century."[31] At its inception, cinema as a technology was deeply anticipated for its ability to record and reproduce a particular mechanistic form of bodily movement.

Tsuchimoto was not unfamiliar with the visual goals of contemporary industrial cinema, with its positive images of mechanization. Before his sojourn to Minamata, he made films for industrial corporations and state-funded projects as a public relations filmmaker for Iwanami Productions, filming for companies like Yawata Steel and Nissan. By the time Tsuchimoto returned to Minamata after reading *Paradise in the Sea of Sorrow,* hundreds people had been subjected to mercury poisoning. The symptoms included numbness in the extremities, narrowing of vision, and loss of control, especially in the hands and feet, and many had died. While it had been clear since 1961 that mercury was accumulating in bodies up the food chain in a process later called "bioaccumulation," the Chisso factory continued to dump effluent into the bay so that the methyl mercury was carried throughout the Shiranui Sea, poisoning various forms of life in the littoral zones and inland sea for over seventeen years. It was learned only in 1998, from the deathbed of a witness who worked at Chisso, that a 1953 change in the oxidizer used (from manganese oxide to nitric acid) had increased the amount of organic mercury emitted per year by the Chisso Corporation by tenfold to 100 kg per year. Despite decades of complaints from the fishing union, the Chisso factory had continued dumping effluent into the sea until they were forced to stop by the government in 1968. It was in this context that Tsuchimoto made his three sophisticated medical films, which explicate the complicated biology of mercury disease, used an analytic rather than presentational approach in the mise-en-scène, and developed what I call his optics of ambulation, all toward the primary

point that makes these films so important for environmental justice and reparations: no body experiences the cumulative effects of mercury poisoning in the same way.

The herky-jerky movements of cats in the medical films that were edited into Tsuchimoto's own medical trilogy compare solemnly with the fluid movement of animal locomotion in early cinema. The locomotion of Minamata cats looks so unnatural that physicians watch their films over and over again for clues as to why the cats exhibit such strange movement. Tsuchimoto hardly ever uses slow motion in his films, but he occasionally slows down the original medical footage to better illustrate how impaired the village cats are. Industrial film history takes on a different cast in these moving images of the biological sentinels of industrial modernity's excesses. Animal movement, which had been so important for presenting moving image technologies as synonymous with the promises of industrial modernity can no longer do that symbolic work for the apparatus.

In addressing cinema history's fantasy of bodily movement, Georgio Agamben describes Gilles de la Tourette's 1886 studies of the human step using footprint reproductions from feet inked with iron sesquioxide powder, which stained the sole of the foot of subjects suffering from disease:

> If we observe the footprint reproductions published by Gilles de la Tourette, it is impossible not to think about the series of snapshots that Muybridge was producing in those same years at the University of Pennsylvania using a battery of twenty-four photographic lenses. "Man walking at normal speed," "running man with shotgun," "walking woman picking up a jug," "walking woman sending a kiss": these are the happy and visible twins of the unknown and suffering creatures that had left those traces.[32]

Thus, he contrasts dynamic images of Muybridge's optics of ambulation and running with images of ambulation that track a different movement. Tsuchimoto's optics of ambulation in his broad oeuvre, unlike early cinema's films of locomotion, are for the sake of the subjects represented and future victims of industrial pollution. This is particularly true of his medical films, which were disseminated to communities and universities around the world to provide visual examples of the newly revealed impact of organic mercury on bodies.

What is especially remarkable about these films, as the director of

Cinema Is about Documenting Lives: The Works and Times of Noriaki Tsuchimoto points out, is that they show that the impact of mercury was different for each body and explicitly illustrate the impossibility of treating the body as a predictable entity, particularly under industrial modernity. Tsuchimoto carefully lays out this point in the third medical film, which had tremendous implications for victims seeking compensation in order to pay for medical care. In certification exams, people were asked to perform the impossible: to behave with a kind of consistency that no body ill with mercury disease could be expected to produce. Despite the impossibility, compensation boards became increasingly rigid in certifying patients, requiring them to show five of the primary symptoms of mercury disease all at once during the certification exam, regardless of the day or time of the exam. The medical films demonstrate that such a standardizing approach was unrealistic, as no two bodies react exactly alike to mercury poisoning.[33]

Tsuchimoto's persistent attention to the difficulties patients had in being certified rested on the scientific evidence that chemical toxins react differently in every body, and he makes this point most powerfully with images of ambulating bodies that actively embed the human subject in environment. In one poignant long take in the second of the three medical films, Tsuchimoto walks with a victim of mercury disease and asks him how difficult it is to walk and to describe those difficulties to him (Figures 3, 4, and 5). This is the medical documentary loosed from its origins: a man in pain ambles along as the filmmaker asks questions and bears witness. The frustrated attempts of an afflicted man to walk are captured in a voice-over conversation between the two men as they cross a muddied field ruined by Chisso's holding ponds. A brief close-up follows the interviewee's quiet voice describing how his bodily movements are not predictable even to himself, especially when he tries to move quickly. His unsure footing, he says, leads to embarrassment. The third medical film, contains a further dialogue between Tsuchimoto and a physician who reveals, as Dr. Tokuomi does in the first film, that there is no rehabilitation. Once a cell is damaged it only deteriorates further.

Another powerful sequence in Tsuchimoto's medical film depicts footage from 1956 of a man walking through his orchard and then of the same man walking through the streets of the city of Kagoshima with a cane, having developed a way of moving relatively swiftly through the world despite the challenges of walking after having been poisoned with methyl mercury

(Figure 6). The camera follows him through a shopping arcade filmed in black and white, and then the film cuts to a shot that zooms out to a bird's-eye view of a man standing with megaphone in hand, and finally to a bird's-eye view of the expansive campus of Chisso corporation with its smoke stacks belching fire in the distance. The three connected shots are accompanied by a man's booming voice-over:

> Look at my body. When I was nineteen years old, I was afflicted with this industrial pollution disease [*kōgai byōki*]. Daily I endure the agonizing struggle with this disease and today I have come to Kagoshima on this fundraising campaign. Should we let this happen to each and every citizen, year after year? We want to show all of you directly, so that you can know of the horrors of industrial pollution and not just Minamata Disease, but the horrors of industrial pollution itself. That's why I am here.

Figure 3. Optics of ambulation: walking with mercury disease (Tsuchimoto, Minamata Medical Film: Pathology and Symptoms, *1974).*

Figure 4. Optics of ambulation: walking with mercury disease (Tsuchimoto, Minamata Medical Film: Pathology and Symptoms, *1974).*

Figure 5. Optics of ambulation: walking with mercury disease (Tsuchimoto, Minamata Medical Film: Pathology and Symptoms, *1974).*

Tsuchimoto's images of ambulating fishermen in pain could not be more unlike those early films so invested in marking predictable lines of movement. Visualization of life was seductive on the screen at the birth of cinematic technology, but when that life meets dangerous chemical compounds, Tsuchimoto's cinema gives us disrupted gait as the appropriate subject of the frame.

In Tsuchimoto's films, the optics of ambulation—a long take of a teen watching TV who drags his body across the tatami mat to answer the ringing phone, or a tracking shot of a young woman bustling home with the familiar jaunt of the afflicted with shopping bags in arm, or the slow water ballet of an octopus hunter filmed in underwater shots of his toes finding sturdy footing among the rocks in the shallows of the Shiranui Sea—are fundamental to his depiction of the slow violence of methyl mercury.[34] These shots of how the afflicted move as they work and pursue daily activities give expression to the toxic load that Minamata victims have been forced to bear.[35] Locomotion is not the mechanistic or reflexive movement

Figure 6. Optics of ambulation: walking with mercury disease (Tsuchimoto, Minamata Medical Film: Clinical Practice and Epidemiology, *1974).*

of early cinema, but the singular and deliberate movement of victims who bear corporate industrialism's excesses.

The Medical Gaze

Tsuchimoto expressed in large calligraphic text now hanging in the Minamata Disease Research Center that: "People cannot just live with disappointment. Minamata taught me that." Tsuchimoto's portraits of daily life create an optics of ambulation for which physical movement is unique to each body. Attending to normal patterns of daily life was essential because to speak only of tragedy, danger, and illness is to engage in what Hidaka Rokurō called, in 1975, "pollution sadism" (*kōgai sadizumu*), which determines that the greater the increase in people who suffer from pollution, or the greater the suffering, the easier the political movement to end it. This, Hidaka says, is a perverse logic that reduces life to a pessimistic apocalyptic vision or misplaced optimistic hope for rebirth.[36]

Tsuchimoto's approach in these films is to edit and include the bounty of over four hundred 8 mm and 16 mm medical films (*igaku eiga* and *igaku kiroku*) and to interview the recorders, who were often physicians, as they watched the films together.[37] Itō Hasuo from the Kumamoto Hygiene department and Dr. Harada Masazumi, a researcher at Kumamoto University who spent decades working with Minamata patients, are animated in their descriptions of the patients they filmed. While Tsuchimoto is often included within the frame engaging them in conversation, the camera zooms in and out of the original medical film as they are screened on the physician's wall. Other times, the camera is focused on a physician who is barely visible in the dark of the screening room. The projector hums in the background, but the camera does not return to the screen of the medical film.

As Tsuchimoto witnesses the physician/researcher watch his original medical films, the close relationship of the researcher to his patient is evident. The medical films seem almost a kind of home movie for these physicians. Itō is initially quiet until the patients begin to appear and then he begins calling out their names and talking about them fondly: "Oh that's the child of Matsuda. Oh, that's Mayumi-chan! She . . ."; or "Oh there's Tanaka-san. He . . ." Tsuchimoto learns about the patients from these early researchers who worked particularly hard to create a record of the circumstances, symptoms, and patient narratives in order to solve the riddle that

mercury poisoning originally was. Harada was particularly active in his efforts to listen to the victims in solving what came to be revealed as a Chisso cover-up.

Tsuchimoto made his medical films to provide an explanation of the ecological and physiological pathways that caused mercury disease for both the victims of mercury poisoning themselves and specialists. The rash of requests for the medical films from various universities in Japan and around the world after the screening of *Minamata: Victims and Their World* at the United Nations in 1972 proved the films were a valuable resource as medical documents. But the three films are not without "excess" in the sense that they include shots of patients in their daily life, in intimate interviews, and in scenes of political action, such as a contentious meeting with the certification committee that would vote on whether a petitioning disease victim would be confirmed as an official victim of mercury poisoning.

The soundtrack of sympathetic physicians and researchers explaining the original medical footage in conversation with Tsuchimoto is a significant reworking of those original films because it shows the deep concern on the part of the medical community to discover the root of the illness, the politics of compensation, and the struggle for just recognition of Chisso's culpability. While the original films appear to insensitively objectify the earliest victims of mercury poisoning, they were made to discover the symptoms of an unknown disease. Nevertheless, the embedding of the original medical films into a larger narrative fruitfully compromises them. In the intermedial space of Tsuchimoto's medical films, there is no objective perspective on the illness. His films provide supplementary discourses that personalize the visual intensity of the original films of the earliest deeply ill patients who could hardly control their hands and bodies, supplementing them with an explicit interpretation through conversations with patients and physicians.

And, as stated earlier, Tsuchimoto sometimes does not even bother to show the original footage, keeping the camera trained instead on the physician's or researcher's face in the dark of the screening room. The original medical footage is no longer the sole object in the frame and this interrupts the medical gaze. The introduction of multiple speakers within the film space of original medical film footage diminishes the sense of intrusion that the original medical films inevitably create with such long takes of the uncontrollable seizures of victims of mercury disease in the final

weeks or even days before death. In this way, Tsuchimoto's medical films involve a complicated character proxemics that cites medical footage not as unassailable data, but as contextualized medical gaze. The framing of original medical film recordings through a focus on the humans viewing those films affirms cinema as a site of active analysis rather than the presentation of scientific fact and observation found in conventional medical films. This revision and historicization of the medical gaze is another aspect through which Tsuchimoto films slow violence.

Social Ecology

Tsuchimoto's long-term travel through the bays and hamlets of the sparkling Shiranui Sea anchors his visual capture of slow violence. Each film is dedicated to a different aspect of the long history of discovering and then living with a terribly debilitating disease: the efforts of fishermen to earn a living on a toxic sea; the daily struggles of victims of mercury poisoning to claim compensation; the activism of those seeking justice; the artwork to which the travesty gave rise. As a whole, the seventeen films he made over the course of over thirty years exhibit a rare commitment to an ecological problem that is continual, everchanging, and varied in its presentation of mercury's effects on a wide range of bodies in terms of size, age, species, and location. This commitment was not lost on the people of Minamata. At his eulogy, marking fifty-three years since his first trip to Minamata, they sprinkled his ashes in the Shiranui Sea. Fisherman Ogata Masato recalled that Tsuchimoto had a penetrating gaze, not only into the eyes the people but also toward the sea. By taking such a long-term view of mercury poisoning, Tsuchimoto relieved himself of the need as a filmmaker to drive his story toward an artificial conclusion that could never exist for the victims anyway.

Tsuchimoto's long-term dedication to the problem of industrial pollution is one straightforward way that he attended to slow violence in cinema: he simply filmed the environmental disaster for decades. But there are other ways that we can consider his filmmaking to have addressed slow violence, ways that are more broadly relevant to film theory and the problem of environmental pollution. As Ivakhiv explains it, there are two angles from which we can consider ecological issues in film. One primarily addresses how the health of an environment is depicted in cinema in "shopworn clichés that populate the modern environmental imaginary . . . [and] typically counterposes a positive or ecotopian imaginary to a neg-

ative, dystopian and apocalyptic one. The former inspires, while the latter enjoins us to action or to despair."[38] These are the kinds of images that Nixon appears to critique when he says that the media cannot capture the slow violence to land and sea. They are the kinds of images that reduce complex ecological problems to emotion and spectacle. An examination of an "ecology of images," on the other hand, includes "much broader kinds of relations—social, economic, political, ethical, and technological—surrounding the production, circulation, and consumption of images."[39] Following Félix Guattari's notion of "three ecologies," Ivakhiv divides the broad category of "ecology of images" into three smaller categories: the material, social, and mental (or perceptual).[40] "Material ecologies" concern the raw materials and physical objects that are used in the production of the object seen by movie viewers, "which span the entire production cycle from the ecosystems and factories where minerals, plastics, silicon chips, and other resources are extracted, processed, and manufactured, to the locations and sets where narrative ideas and shooting scripts are shot and crafted into cinematic works, which are then distributed and viewed, with waste products emerging at each stop of the way."[41] The "social ecology" includes how people are brought together through film "for commercially or artistically productive work or for recreation, social mobilization, and other purposes."[42] I might also call this a political ecology for the way that the communities created around the film are also political in how they "raise questions about differential access to production, consumption, interpretation, and control."[43]

From my perspective, the material and social are deeply linked, but in order to bridge a perceptual gap that might be produced in positing the first two categories of the material (biophysical world) and social (culture), Ivakhiv follows Guattari in introducing the third ecology: the "mental" or "perceptual." The mental or perceptual ecology is introduced to suggest an "intermediary register." It is "the interactive dimension through which a world comes into being for world-bearing beings."[44] This perceptual dimension is meant to intervene so that how the film shapes the world cannot be explained solely through perspectives produced out of the circulation of "image-commodities." In a short critique of Jonathan Beller's *The Cinematic Mode of Production,* Ivakhiv writes:

> Beller's analysis [of cinema as an "attention economy" that manages its viewers], like other Marxist analyses, posits such an overwhelming level of coordination between the parts—the

> material-economic, the social, and the perceptual—that little room is left for understanding how change occurs or how people, individually or in groups, can act to ameliorate the world from within the conditions that determine them. Furthermore, these analyses do not sufficiently discriminate between the studio-centred "classical Hollywood mode of production" and the more hybrid modes.[45]

The ecocritical angle that Ivakhiv intends to pursue through his use of the conceptual ecology of images is to introduce a more material dimension into film criticism and to do so in a way that can account for the ecocritical import of what filmmakers do.[46]

Ivakhiv's concept of the social ecology of film suggests that examining how Tsuchimoto's films traveled constitutes an important aspect of his professional response to slow violence. *Minamata: Victims and Their World* (shortened from 167 minutes to 120 minutes for international release) was shown at Stockholm's first United Nations Human Environment Convention in June of 1972 and took Tsuchimoto, Minamata disease victims Hamamoto Tsuginori, Sakamoto Fujie, and Sakamoto Shinobu, and Dr. Harada to Europe. In the ensuing months, Tsuchimoto was asked to screen the film in China, North Korea, Paris, London, Rome, Hamburg, Moscow, and elsewhere. He visited more than ten countries and held 163 screenings in less than two years. Today, the initial environmental conference at the UN is considered to have been the start of a global environmental movement and to have had a tremendous impact on future environmental protection policies.[47] Harking back to this legacy of mercury toxicity, 140 nations, again at Stockholm on January 19, 2013, agreed to a range of limitations on mercury use in products and in gold-mining, to developing appropriate waste facilities for disposing of the toxic substances, and to ending the export for profit of mercury waste. This agreement has been named the "Minamata Convention on Mercury" (which is not uncontroversial, since many in Minamata prefer to build a new legacy for Minamata as a green city).

Tsuchimoto made his medical films after the UN trip to provide further detail about the disease. Upon completion, they were sent to hundreds of medical institutions around the world that had requested them and functioned as resources for understanding the etiology of mercury disease, its personal and social impacts on victims, and the difficulties encountered in certification tests. However, while in conversation with an

old widower on one of the Shiranui Sea's more distant islands, Tsuchimoto found that his most important audience—the potentially afflicted—had not seen the films. As he tells the story in the film *Record at the Heart of Adversity,* Tsuchimoto met a man in Goshonoura whose wife's hair had shown 920 parts-per-million (50 was the level at which Minamata disease was determined to have officially set in, although many victims showed symptoms at a lower ppm rate). She had had no contact with physicians or authorities concerned for her and other fishing families' welfare. Her husband, then an old man who had watched her die, said to Tsuchimoto: "Minamata disease? Who knew about Minamata disease? I'd never heard of it. I didn't know if it was a cold or what. After I saw it on TV I thought—What?! That's the same thing my wife had!" Tsuchimoto recalled, "I was stabbed in the chest by his remarks."[48]

In response, Tsuchimoto put together a staff of five and developed a map for screening his films for locals. He traced a circle in the bay with a radius of thirty kilometers and determined his screening sites to be as frequent as a single bus stop away so that anyone could attend: those who could not walk could get there by a short bus ride. The screening tour's name was a homonym for "religious pilgrimage" but used the Sino-Japanese characters meaning, instead, "sea pilgrimage."[49] Tsuchimoto planned to take his films to what he called the coastal and island "nether regions" (*ankokubu*) of Minamata's polluted areas. In calling these areas "nether regions" he was being neither derogatory nor assuming that these were unenlightened areas. Rather, he pointed to the fact that scientific discourse of Minamata disease had not yet arrived in these places, to the detriment of fishing families.[50]

The months-long film tour screened medical films to those who most needed to see them. These areas were inhabited by people who exhibited some of the highest levels of toxicity ever witnessed because, as Tsuchimoto illustrates in his medical film trilogy, they had been living off of the Shiranui Sea's bounty throughout the decades of its highest levels of toxicity. Even if they had known the high levels of toxicity of Shiranui's waters, these fishing folk living on small islands had little land for farming. As two older women in one medical documentary put it: "There's nothing else to eat. The sea's all we've got." While the Chisso corporation would have an investment in keeping victim numbers lower, and while many residents did not want to face the discrimination of being a Minamata disease victim, Tsuchimoto wanted to avoid even one case of unrecognized

toxicity by arming potential victims with knowledge of the disease. Therefore, he created a perceptual field for invisible toxicity through various techniques, including early forms of data visualization, film footage of certification tests, and so on. The importance of visual evidence for diagnosing the disease is depicted in one dramatic scene in which Tsuchimoto presses an island physician on how he could properly diagnose a person if he had never made an effort to see a case of Minamata disease on the mainland. These films were intended to help locals identify disease for health care and compensation because, from 1956 to 1977, physicians, especially epidemiologists, had taken samples only from specific points in the region.[51] Furthermore, even after hidden data of hair mercury levels had been released and the hygiene ministry estimated that between 10,000 and 15,000 people were affected by organic mercury, no active measures had been taken.[52]

By traveling to one hundred venues, Tsuchimoto created the conditions for people to identify themselves as a community of people who were all potentially afflicted. This is another social ecological aspect of his filmmaking. He also discovered in his film-screening tour of the islands (begun on August 1, 1977, in famed people's historian Irokawa Daikichi's Volkswagon van) people who felt they had been discriminated against in their lack of information about the disease and lack of official recognition as victims of the disease because they lived so far from Minamata: "It's like racial prejudice," they said in a filmed interview.[53] By expanding his audience to include the local population, it became clear the degree to which mercury disease affected so many more fishing families beyond the villages near the Chisso factory, including those living on the islands ringing the far corners of Shiranui Sea. This is the mental ecology produced by the pilgrimage. His medical trilogy gave witness to the psychology and position of victims long after Chisso's culpability had been established. This is also what makes Tsuchimoto's medical documentaries such a clear example of the visual witnessing of slow violence: they document the symptoms and history of a toxic event that had already lasted more than two decades and would continue to impact fishing families. The sheer detail and information included in them required a Herculean effort of organization and persistent checks on the narrating physicians to keep them from introducing mind-numbing jargon so that the films could fulfill their function as educational films.

The film tour addresses slow violence by meticulously tracking the pollution throughout the region in film and literally carrying the films to those places. The screening tour's expressed material and social ecologies put pressure on a familiar pattern that was emerging: the marginalization of certain types of victims. Those with "lighter symptoms" or those newly recognized as sufferers, or those who did not live in Minamata city, or those who lived in Kagoshima prefecture, or those who lived in Amakusa and outlying islands, or those whose disease was discovered outside of the original region where Minamata disease was first discovered, or those who did not exhibit all five symptoms of the disease—all of these people were acknowledged far less frequently by the medical community. In traveling to outlying areas, the "nether regions," Tsuchimoto reported that the outlying islanders had experienced some of the highest rates of mercury poisoning (based on hair analysis) because they had never refrained from eating fish. Tsuchimoto surmised that it took ten years for knowledge of the disease to reach ten kilometers from what he called "Minamata ground zero." It took twenty years for word of the disease to travel twenty kilometers from ground zero. This is why the hair samples of fisherfolk furthest out from Minamata showed the highest levels of mercury toxicity. Tsuchimoto called this "criminal negligence" toward fishermen at the margins (*shūhen gyomin*).

The medical films served as a record of violence by government and corporations. Victims armed with knowledge gleaned from watching Tsuchimoto's medical films, even in the face of a denial for compensation (which became increasingly common), would have the confidence and courage to go back for more testing time and again to eventually get certified. Tsuchimoto's efforts to create his medical films as reliable historical resources rather than films woven together by an "image author" (*eizō sakka*) meant avoiding montage. Shots are sutured through simple, predictable cuts.

While the medical films use data visualization rather sparingly, charts are employed in the third film to plot the dip in the number of patients certified with the disease. This kind of data visualization is a clear strategy to make visible, as a cinema of slow violence will, the culprits who perpetuate environmental injustices. At a public screening of his medical documentaries, Tsuchimoto revealed that at least one medical personnel stated in 1960 that Minamata disease was over. For eight years, only congenital

cases were admitted. At one point, Dr. Harada resigned from the certification process in protest because the board was not certifying those with compromised health.

To keep these gatekeepers honest, as described in the medical documentaries themselves, Tsuchimoto made and screened these medical films using archival footage from the 1950s–60s and new footage he created himself between the 1960s and the 1970s to provide a record that would disprove any claim by specialists that new cases had not emerged since the 1960s. What one chart shows is that, by 1972, sixteen years after the first recorded case of mercury poisoning and after the culprit Chisso Corporation was finally indicted and a compensation system set up for victims, the number of those certified decreased! Since 1953, physicians had become the ones to distribute compensation money through the certification committee, and at some point, the committee became quite stingy with their results. As one victim put it in the third medical film, "It became harder to pass a certification exam than to pass a college entrance exam to Tokyo University" (and only about one high school student went to Tokyo University every twenty years according to Ishimure). One patient depicted in Tsuchimoto's third medical documentary had given up on going to the board, and he was not alone: many went back three or four times before being confirmed, if at all. The third film documents the various tests of vision, hearing, and sensitivity in the extremities (Figure 7).

Tsuchimoto's medical films document physicians and researchers before and after they had been co-opted by the registration and certification system so that his footage could remind the physicians of their roots. The second medical film is dedicated in part to the work of this same Dr. Takeuchi Tadao, who had taken a wide perspective on who qualified as a victim of mercury poisoning, naming thousands on the shores of Shiranui Sea as victims. He was the chair of the board of petition claims but was eventually ousted from the certification board, after which the criteria for qualifying for compensation became much more rigid. Dr. Takeuchi had researched the pathology of Minamata disease for seventeen years and used microphotography to convey his results in medical footage. In the third film in particular, the increased difficulty in being certified as a victim of Minamata disease is depicted through interviews with multiple victims. Voice-over narration explains how one of the physicians most dedicated to getting certification for victims was ousted.

Tsuchimoto's early philosophy of filmmaking as expressed in his

Figure 7. Eye examination for certification (Tsuchimoto, Minamata Medical Film: Clinical Practice and Epidemiology, *1974).*

"What Should Film Do?" argues that film will never relieve anyone's pain. Therefore, empathy is not truth. The most affective visual and narrative modes by which he effectively gets at what he called "the real image" are, to my mind, the ways in which he films the slow violence of mercury poisoning through an optics of ambulation, through an embedded medical gaze, and attention to the social ecology of his films.

Mushroom Clouds on Paper

Tsuchimoto's film on nuclear technology takes a different tack from the medical films in representing slow violence, perhaps because the media context for representing radiation was so different. Radiation had long been linked to the sensational image of the mushroom cloud, which came to be one of the most ubiquitous icons of violence and power in film history. It is an icon of U.S. military power and the ressentiment of a once occupied nation. It is the icon of a cold war–era struggle for global

domination and the destruction of South Pacific islands. In apocalyptic cinema, it also serves as an ominous symbol of our capacity as humans to annihilate everything we have known, including ourselves.[54] But the bomb's iconic capacity to depict total annihilation when actually deployed in war overshadows the kinds of slow violence that occur as a result of this technology in other arenas, including bomb testing. Plants, animals, soldiers, and countless communities and environments in the South Pacific have been subjected to radiation from over one thousand U.S. bomb tests in the atmosphere, on the earth's surface, on boats and barges, and underwater. Ever since the first bomb test on July 16, 1945, on the Alamogordo Air Force Base in New Mexico, indigenous communities and environments have suffered from radiation exposure. Yet these communities have featured little in moving images. Nixon asks a fair question in his *Slow Violence*: how often have the Marshall islanders, who have borne the impact of sixty-seven atmospheric nuclear tests, been represented in film? How often does film depict jellyfish babies who live for only a few hours after their birth because of the severe defects suffered as a result of radiation?[55] Meanwhile, the repetitive use of the iconic mushroom cloud in the visual arts has diluted it of semantic power. Artist Kyo Maclear writes: "Hiroshima's Mushroom Cloud, while periodically stamped with fierce meaning, has also inspired as much trite imagery as any other twentieth-century phenomenon. . . . The collective shiver once induced by this image has passed into a pervasive sense of ennui."[56]

Tsuchimoto's *Nuclear Scrapbook* (1982) is an astute representation of the slow violence of radiation, for its utter lack of action and stifling of movement. A forty-six-minute film presenting articles about nuclear bomb tests and the dumping of nuclear waste, it simply presents shot after shot of thirty-seven years' worth of newspaper articles about radiation-related events around the world. Occasionally, a hand holding a pair of scissors cuts out an article or words are highlighted on the screen, but otherwise, the film is composed entirely of words on the newspaper page, stories chosen from over 10,000 articles collected by Tsuchimoto and his crew. The repetitive shots of the yellowing pages of newspaper articles about nuclear bombs, bomb testing, nuclear power, and nuclear waste from 1945 to 1982 make the point that nuclear bombs and nuclear power are "the same thing" (*onaji shitsu*). The two bombs dropped on Japan by the United States are featured only briefly. Rather, articles presented on screen feature bomb tests in the Marshall Islands, the dumping of nuclear

waste off the Tsugaru peninsula, Three-Mile Island leakage, the exposure of Americans to bomb tests at the Nevada Yucca Flats test site, nuclear test sites in Asia, Japan's attempt to export nuclear power into Asia, Japanese and U.S. government plans to dump radioactive waste in the islands of the South Pacific, and the planned construction of dozens of reactors in Japan.

Time is compressed in shot after shot of newspaper print, itself a medium that explicitly indexes time and depends on the passage of time as a medium. In the pamphlet for this film, Tsuchimoto addressed the problem of time, saying that Pacific islanders and American soldiers who had been exposed in the south Pacific "had within their bodies a scary ticking time bomb."[57] The time gap between the onset of symptoms and death was long for some. A Canadian nuclear gypsy with cancer is depicted in the film as the first human facing death by a nuclear power industry that calls itself "safe." That 1961 article is sutured to other articles about those ill or dead from leukemia caused by Bikini Island bomb tests. These shots of newspaper articles are not invested in depicting the original site of nuclear exposure or a mimetic representation of that moment. Rather, they produce the passage of time through the filmed textuality of the newspaper page. The two-dimensionality of the newspaper interrupts the indexicality of the filmic image.[58]

An occasional zoom-out captures a half page of the newspaper in a single shot. A zoom-in allows for the reading of nine or so lines. The newspaper articles, sometimes yellow with age, are accompanied by a voice-over narration by Ozawa Shōichi, who provides a stream of details on nuclear bombs, power, and waste, such as the facts that, from 1976 to the present, 300,000 drums of radioactive waste have been piled in Shimatsu and that 1700 drums of radioactive waste were dumped in the Sagami and Suruga bays between 1955 and 1970. The article headlines appear in various areas of the screen and multiply as the shots pile one upon another. They read: "Cobalt 60 / Cesium 137: Fears that Seafood is Affected,"; "Concentrations 32 Times Normal"; "Radioactive Waste"; "Seafloor Pollution"; "Oil Drum Leaks?: Detected in Suruga Bay"; and so on. This multifaceted perspective greatly expands the sense of who is a perpetrator when it comes to the release of radiation. The Japanese nation-state is no victim in this stream of articles about various forms of nuclear technology.

The panoply of stories about all things nuclear is sutured together through two words: "radioactivity" and "radiation."[59] Radioactivity, that invisible thing, takes shape over and over again through textual image.

Tsuchimoto called the newspaper page presented on screen a "picture" (*e*).[60] The articles are visually sutured by a series of loose match cuts on the word "radiation" in newspaper print such that the word on the page becomes the synecdoche for a web of toxic communities and many sovereign powers not linked by a single event but by the slow spread of a deadly technology turned into a toxic drift. The film also shows that some victims of nuclear bombs have become supporters of nuclear power.

Stylistically, the film could not be less spectacular. The politics of Tsuchimoto's visually unremarkable film of newspaper clippings lie precisely in the film's strict refusal of visual spectacle. (Figures 8 and 9). The iconic mushroom cloud, when it does appear, is a blurry faded photograph among a sea of newspaper lines. The slow violence of radiation is instead depicted in a multiplicity of shots of newspaper articles about a range of victims from various nations and climates. Both the United States and Japan are shown to be complicit in spreading nuclear contamination and ill health at multiple international sites. If one shot lingers on the newspaper photo of an American military soldier with a hand swollen beyond the size of a football from radiation poisoning who is traveling to Japan for aid, the next features a story about the fact that half the film crew for the American film *The Conquerer,* shot near the Yucca Flats test site (with Genghis Khan played by John Wayne), have died from cancer. The shutdown of the Three Mile Island to fix a coolant leak is depicted freshly through its connection to an earlier shot of Bikini Island victims of bomb testing.

The drama of the film, such as it is, rests in the highlighting of words and phrases on screen, the theatrical voice-over of Ozawa, and the hard plucked strings of a guitar. In their visual repetition, the articles of the daily press levy proof that the proliferation of nuclear power plants has not been the result of an off-screen movement or a secret development. It has been a public project all along, a "project of mimesis" in the public arena. As nuclear literature scholar John Treat points out, "The rationale for their proliferation is not governed by the logic of market economics, nor is it mere proof of technological prowess; rather it has to do with Japan's assignment within the post-1945 American world order to redouble the pace of its modernization as a project of mimesis."[61] In this context, the project of mimesis is the scourge of construction of nuclear power plants, which constitute yet another example of the built scapes of agricultural, industrial, and energy technologies that get mimetically multiplied in global modernity.[62]

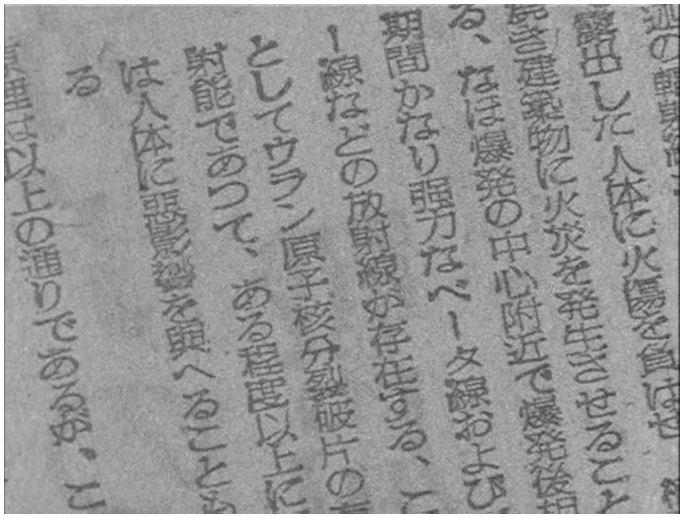

Figure 8. One of tens of shots of newspaper articles in postwar Japanese newspapers featuring the term "radiation." This one refers to the first atomic bomb dropped in Hiroshima. (Tsuchimoto, Nuclear Scrapbook, *1982).*

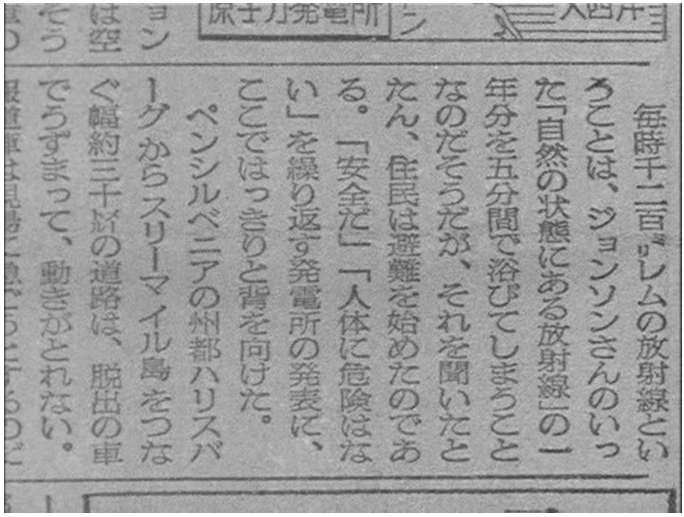

Figure 9. One of tens of shots of newspaper articles in postwar Japanese newspapers featuring the term "radiation." This one refers to radiation exposure at Three Mile Island and bottlenecked traffic as evacuees fled the area. (Tsuchimoto, Nuclear Scrapbook, *1982).*

The film's patient and meticulous history of the introduction of a new public vocabulary for the burgeoning nuclear industry clearly reveals how complicit the media was in the the Japanese state's determination to be the leader in nuclear sales in East Asia through a new kind of so-called "co-prosperity" sphere. Without making too powerful a suggestion of continuity, the film begins with descriptions of the Hiroshima bomb and concludes with Japan's postwar colonialist endeavor whereby it sells nuclear plant parts and technology to its Asian neighbors. One shot cuts to a newspaper photograph of Indigenous children and adults on a Pacific beach while Ozawa's voice-over narration explains the resistance to Japan's dumping of radioactive waste by people in southern islands, especially Guam and the Marianas. Ozawa's narration also treats the sea as victim: "The victim of this dumping is the Pacific. The arrogance of the Japanese state that tried to force a dangerous load onto the weak met with resistance and criticism from the Pacific islanders."

The political and technological mimesis of the cold war that deeply impacted "ecosystem people" who subsist on land and water are all "indexed" through the word "radiation."[63] In other words, *Nuclear Scrapbook* makes no attempt to visually reproduce the pain and damage of radiation on bodies and the oceans in a mimetic sense. The impossibility of such a project lies first in the problem of measuring internal radiation and the delay of symptoms from the contaminant. Given the impossibility of mimetic representation, the newspaper page and the textual image of "radiation" and "radioactivity" served to represent the slow violence of radiation on bodies.

On Mise-en-scène

In this last section of my discussion of Tsuchimoto's filmic approaches to slow violence, I address the lively ontology presented in the mise-en-scène of another film that features a two-dimensional medium. His 1981 film *Minamata Mural* documents the creation of a very sizable new work by two artists, Maruki Iri and Maruki Toshi, both nominated for the Nobel Peace Prize in 1995, who had been painting giant murals of wartime atrocities in human history, including the aftermath of the bomb dropped on Hiroshima, the Rape of Nanjing, and death camps at Auschwitz. In *Minamata Mural,* the Marukis turn to a different kind of atrocity. The film begins with artist Iri describing his efforts to paint watercolors of the

Shiranui Sea. As he looks out at the Shiranui Sea with a slim paint brush held loosely in his hand, Iri explains that his experience in Minamata fundamentally changed his approach to painting. He admits that he was wrong when he thought he could paint Minamata through its landscape (*fūkei*). He could not. His wife, Toshi, was even more stymied at the prospect of representing Minamata in painting and describes her dilemma as an artist in the language of "slow violence." Reflecting on the other murals she and Iri painted of violent events in human history, she says that what made Minamata different was not the violence of the crime, but that it played out over such a long swath of time: "Minamata is Hiroshima in slow motion . . . Hiroshima was awful, Nanjing was awful, and Auschwitz was awful. Then I went to Minamata where slowly, slowly [*yukkuri, yukkuri*], terrible things occurred. Hiroshima was a nuclear bomb. The form [that violence] takes in Minamata is not a bomb that blows up in an instant [*shunkan*]. The same victims emerge, but they emerge over a long period of time." Toshi explains that conventional affective modes for depicting violence could not work for Minamata: "I traveled around to victims' houses and I met them and watched them closely. They were really innocent. What do they see, where we see nothing? When they didn't know what expression to make, it seemed they had a deep melancholy about them. They laughed, but they didn't just laugh. It seemed they had a lot going on in their heads."

In this film, Tsuchimoto witnesses the efforts of these two artists to portray the poisoning of a sea and its denizens over decades of history. As the camera passes over the mural, a long, original poem is narrated by Ishimure.[64] The camera focuses steadily on Toshi's brush, which moves in deliberate motions, creating clean, slightly uneven black lines, and her skill as a painter of figures is captured in close-ups of inky black birds and crabs on their backs. The film revels in close-ups. One giant close-up of a cat's white eye that is missing a pupil is viewed so closely as to reveal the tiny holes of the Japanese paper on which the mural is painted, giving the impression of a translucent, milky eye. The white eyes of humans, also without pupils, stare out of the mural as Ishimure's voice-over recites a poem of living things who want to live but are shut tight in a sarcophagus of death. This is a reference to the huge reclamation project by Chisso that trapped millions of organisms and their habitats in the most toxic parts of the bay in large drums. The poem describes the living creatures as buried alive and their torment as a restless sleep of the dead. Crooked fingers and bent

bodies and saliva dripping from the mouths of babes, drawn in charcoal black, are also depicted in extreme close-ups. Countless octopuses float in the air in an inversion of sea and sky that represents the topsy-turvy world perpetrated by Chisso. Each body part, each animal, and each eye will be impossible to see up close like this once the enormous mural is hung.

The film's critique of slow violence lies in this intimate mise-en-scène that records in the simple materials of ink and water the people, organisms, and sea in a consistently inclusive frame. The two-dimensionality of the mural helps draw attention to the trophic connection from water to algae to fish to human. In this two-dimensional medium depicted in black and white, landscape cannot be ambient. The film, therefore, contains no "good shot" of an aestheticized landscape. One of Tsuchimoto's oft quoted points is that "film is a work of living things." As Jesty describes in his discussion of Minamata disease, in Tsuchimoto's cinema, this reference to living things is a way of approaching film production as a product of relationships: "Rather than in the authorial/technical procedures of cutting and splicing, films work took place in the specific relationships and interactions among living things."[65] One of his cohort called Tsuchimoto's filmmaking "symbiotic" in the sense that he and the subject of the frame worked organically to produce shots. But this interpretation of his relationship as a documentarian to his subject still depends on a dichotomy of the subject of human gaze and the person or object on which the gaze lands. I would suggest that Tsuchimoto's comment that film is a work of living things is better read through the rich life depicted in his mise-en-scène. The "world" of his first film's title, *Minamata: Victims and Their World,* suggests that all of the elements of the mise-en-scène are integral to each other from an ontological point of view. In *Minamata Mural,* Toshi's carefully drawn figures of humans and animals, fish and cats, are on the same plane. The film captures her exquisite detailed drawings, which are then covered by a dark wash spread over the line drawing by Iri. Nearly every figure is caught up in his wash, and it suddenly appears to be a metaphor for the shared experience of the denizens of the Shiranui Sea who have been subjected to the same toxic drift, though Iri used this method in earlier murals.

This dark wash that captures every creature and entity within it denies the ability for landscape to function as ambient space. The mise-en-scène here becomes an ontologically rich site in which fish, animals, and humans float together on a two-dimensional plane. In such an approach

to mise-en-scène, landscape is not imagined as fundamentally stable for human culture to draw upon for its actions. The slowly moving camera is not put in service to any particular *ethnos* or *anthropos*, but rather expresses the affinities among the range of bodies on the mural, which becomes the film screen. Each mise-en-scène, each shot of the mural, contains a diverse ontology that includes sea and sky, organisms and toxins. The memorable two-dimensional mesh of the mural so emphasized in close-ups reduces syntagmatic approaches to film like the constructing of atomistic character, humanistic meaning, humanistic gaze, and a suturing of image to human gaze. A critique of slow violence, in this film, takes form in the close-ups of human and nonhuman figures on the mural and on the screen representing the intimate trophic connections of fish, cats, and people.

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